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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,983	02/20/2004	Jessamine Lee	H0498.70190US00	4383
86110 7590 09/03/2009 Harvard University & Medical School c/o Wolf, Greenfield & Sacks, P.C. 600 Atlantic Avenue Boston, MA 02210-2206				
EXAMINER				
BOYER, RANDY				
ART UNIT		PAPER NUMBER		
1797				
MAIL DATE		DELIVERY MODE		
09/03/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/783,983

Applicant(s)

LEE ET AL.

Examiner

RANDY BOYER

Art Unit

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-32, 34-36, 62-64, 77, 83-85 and 90-109 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-5, 7, 9-13, 15, 17-32, 34-36, 62-64, 77, 83-85, 90, 92-95 and 100-108 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 1, 8, 14, 16, 91, 96-99 and 109 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 15 April 2009
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Examiner acknowledges Applicant's response filed 15 April 2009 containing amendments to the claims, remarks, declaration of Mr. George M. Whitesides, and Information Disclosure Statement.
2. Claims 1-5, 7-32, 34-36, 62-64, 77, 83-85, and 90-109 are pending. Claims 90-109 are newly added.
3. Examiner acknowledges that Applicant's amendment to claims 10 and 64 are sufficient to overcome the previous objections.
4. All previous rejections of claims 1-5, 7-32, 34-36, 62-64, 77, 83-85 under 35 U.S.C. 102 and/or 35 U.S.C. 103(a) are withdrawn in view of Applicant's amendment to the claims and/or the Whitesides declaration.
5. Claims 2-5, 7, 9-13, 15, 17-32, 34-36, 62-64, 77, 83-85, 90, 92-95, and 100-108 are allowed in view of Applicant's amendment to the claims. Likewise, allowable subject matter is indicated with respect to claim 1.
6. Finally, objection is entered with respect to claims 1, 8, 14, 16, 91, 96-99, and 109. The objections follow.

Claim Objections

7. Claim 1 is objected to for lack of antecedent basis in the claim.

8. With respect to claim 1, the claim recites the limitation “the direction of diffusion.” There is insufficient antecedent basis for such limitation in the claim. Appropriate correction is required.

9. Claims 8, 14, 16, 91, 96-99, and 109 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claims, or amend the claims to place them in proper dependent form, or rewrite the claims in independent form.

10. With respect to claims 8, 14, 16, 91, 96-99, and 109, all are drawn to either “a microfluidic system” or “an apparatus” – i.e. all are apparatus claims. Apparatus claims are defined by structural limitations. See MPEP § 2114. Because none of claims 8, 14, 16, 91, 96-99, and 109 impart any further structural limitations to the apparatus claim(s) from which they depend, they do not “further limit” such claims and as such are considered improper dependent claims. Appropriate correction is required.

Priority

11. The declaration of Mr. George M. Whitesides, filed 15 April 2009 under 37 CFR 1.131, is sufficient to overcome the Gao reference.

Allowable Subject Matter

12. Claim 1 would be allowable if rewritten or amended to overcome the objection set forth in this Office Action.

13. Claims 2-5, 7, 9-13, 15, 17-32, 34-36, 62-64, 77, 83-85, 90, 92-95, and 100-108 are allowed.

14. The following is Examiner's statement of reasons for allowance:

With respect to claims 1-5, 7, 9-13, 15, 17-32, 34-36, 90, 92-95, 100, 101, the prior art of record does not disclose or suggest a fluidic or microfluidic system or method of promoting interaction therein comprising, in relevant part, at least two fluid paths with a convection controller being positioned at a contact region formed by the intersection of the at least two fluid paths.

With respect to claims 62-64, 77, and 85, the prior art of record does not disclose or suggest a method comprising the steps of Applicant's claim 62.

With respect to claims 83, 84, and 103-108, the prior art of record does not disclose or suggest an apparatus comprising, in relevant part, a first and second connecting path wherein at least one of the first or second connecting paths comprises a mixer.

Conclusion

15. The art made of record and not expressly relied upon is considered pertinent to Applicant's disclosure: (1) Khandurina (J. Khandurina et al., *Microfabricated Porous Membrane Structure for Sample Concentration and Electrophoretic Analysis*, 71 ANAL. CHEM. 1815-1819 (1999)); and (2) Bohn (US 7,220,345).

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Randy Boyer whose telephone number is (571) 272-7113. The examiner can normally be reached Monday through Friday from 10:00 A.M. to 7:00 P.M. (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Caldarola, can be reached at (571) 272-1444. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

Art Unit: 1797

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Randy Boyer/

Examiner, Art Unit 1797

/Glenn A Caldarola/

Acting SPE of Art Unit 1797